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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,429	11/30/2001	Toshinori Iinuma	NAK1-BQ55	3413

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SNELL & WILMER LLP  
1920 MAIN STREET  
SUITE 1200  
IRVINE, CA 92614-7230

EXAMINER

ROBERTS, BRIAN S

ART UNIT PAPER NUMBER

2662

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/980,429

Applicant(s)

IINUMA, TOSHINORI

Examiner

Brian Roberts

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11/30/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/30/2001</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Applicant's preliminary amendment filed 11/30/2001 is acknowledged.

Claims 1-5 have been examined.

#### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sanders (US 5909649) in view of Katz (US 6321082).

- In reference to claim 1

Sanders teaches a base station (101) in a Space Division Multiple Access (SDMA) radio communication system having a plurality of antenna elements (103) to transmit and receive to multiple radio communication devices (107, 109) on a same frequency and time channel that includes:

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- A processor (209) that maintains a table indicating the distance metrics between each pair of radio communication devices sharing the same channel where j and k represent the communication devices (column 4 lines 48-61)
- A plurality of antenna elements to receive signals where the signals are combined with a complex set of weights chosen for each radio communication device in a plurality of combiners (201)
- A processor (209) for comparing the distance metric to a threshold value (column 5 line 5-6)
- The base station (101) where if the distance metric is less than the pre determined threshold, then one of the communication devices assigned to that channel is then re allocated to a second communication channel (column 5 lines 14-17)

Sanders does not teach a control means for reducing the transmission power during a time slot.

Katz teaches a base transceiver station (4) in a space division multiple access system where:

- If the distance between the first and second stations is less than a predetermined value, communication data is transmitted to the second station at a relatively low power level (column 3 lines 32-35)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Sanders to include adjusting the

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transmission power level according to a predetermined value as taught by Katz because transmitting at a lower power level reduces the risk of co-channel interference.

- In reference to claim 2

Sanders teaches a system and method that covers substantially all limitations of the parent claim.

Sanders does not teach a control means for adjusting the power level if the reception level falls below a threshold due to a movement of the mobile station.

Katz teaches a base transceiver station (4) in a space division multiple access system where:

- If the distance between the first and second stations is greater than a predetermined value, the communication data is transmitted at a higher power level (column 3 lines 35-37)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of Sanders to include adjusting the transmission power level according to a predetermined value as taught by Katz because transmitting at a higher power level increases the communication range between the mobile station and a base transceiver station.

- In reference to claim 3 and 5

Sanders teaches a system and method that covers substantially all limitations of the parent claim. Sanders further teaches:

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- A plurality of antenna elements to receive the RF signals where the received signals are then combined with a complex set of weights chosen for each radio communication device in the combiners before being processed by the processor (209) (column 3 lines 34-42)
- A processor (209) to calculate the distance metric of each pair of radio communication devices sharing the same channel (column 4 lines 47-61)

- In reference to claim 4

Sanders teaches a system and method that covers substantially all limitations of the parent claim. Sanders further teaches:

- A base station where if the distance metric is less than the pre determined threshold, then one of the communication devices assigned to that channel is then re allocated to a second communication channel (column 5 lines 14-17)

Sanders does not teach adjusting the transmission power level for different frequencies.

Katz teaches a base transceiver station (4) in a space division multiple access system where:

- If the distance between the first and second stations is less than the predetermined value, communication data is transmitted to the second station at a relatively low power level and if the distance is greater than the predetermined value, the communication data is transmitted at a higher power level (column 3 lines 32-37)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the system and method of channel reallocation of Sanders to include transmitting at variable power levels as taught by Katz because transmitting at a low power level reduces the risk of co-channel interference.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure are:

- Tangemann et al. (US 6008759) teaches measuring the receive level of each radiating element in a Space Division Multiple Access mobile radio system
- Velazquez et al. (US 2001/0003443) teaches a Space Division Multiple Access system and method to reduce co-channel inference.
- Piolini (US 6337853) teaches a method for channel assignment in a mobile communication system with Space Division Multiple Access
- Kuwahara (EP 0895301 A2) teaches a multiplex communication apparatus for a base station applicable to a Space Division Multiple Access mobile communication system.
- Katz (US 6643526) teaches a method of selecting the transmission power level of a signal in a Space Division Multiple Access communication system.


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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Roberts whose telephone number is (571) 272-3095. The examiner can normally be reached on M-F 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BSR  
06/27/2005

  
**JOHN PEZZI**  
**PRIMARY EXAMINER**